

IN THE CLAIMS

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Please cancel claims 11-16 without prejudice, and amend
claims 1 and 17 as follows:

1. (Amended) A method of growing a nitride layer on a
substrate, comprising the steps of:

adding a plasma molecule to a chamber containing a nitrogen-
bearing molecule;

exposing the nitrogen-bearing molecule and plasma molecule to
microwave energy, therein generating an emission of light from the
plasma molecule within the chamber,

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exposing [a] the nitrogen-bearing molecule to [an] the
emission of light from the plasma molecule, thereby disassociating
a nitrogen ion from the nitrogen-bearing molecule; and

placing the nitrogen ion in close proximity to a receptor
ion, such that the receptor ion and the nitrogen ion combine to
form a nitride on the substrate.

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2. The method of claim 1, wherein the nitrogen-bearing
molecule is ammonia.

3. The method of claim 1, wherein the receptor ion is selected from the group consisting essentially of:

aluminum;

gallium; and

indium.

4. The method of claim 1, where the receptor ion is an alloy of a Group III element.

5. A method of creating a layer on a substrate, comprising the steps of:

placing a substrate having a top in a chamber;

generating an excitation beam within the chamber whereby a direction of the excitation beam is substantially perpendicularly directed toward the top of the substrate;

introducing a reactant gas that flows into the excitation beam thereby generating a plasma;

introducing an inert gas into the excitation beam and the reactant gas thereby generating ultraviolet light;

flowing an ionic gas into the chamber across the top of the substrate, whereby the plasma interacts with the ionic gas; and

flowing a group III gas into the chamber across the top of the substrate, whereby the plasma interacts with the group III gas, and whereby the interaction of the plasma with the ionic gas and the group III gas causes a growth of a group III nitride layer on the substrate.

6. The method of claim 5, wherein the reactant gas is ammonia.

7. The method of claim 5, wherein the inert gas is xenon.

8. The method of claim 5, wherein the ionic gas is a mixture of ammonia and nitrogen.

9. The method of claim 5, wherein the group III gas is gallium.

10. The method of claim 5, wherein the group III gas is a combination of gallium and indium.

17. (Amended) A method of disassociating a molecule,
comprising the step of exposing the molecule to a photon emission
wherein the photon emission is emitted from within a chamber
containing the molecule.

18. The method of claim 17, wherein the molecule is ammonia.

19. The method of claim 17, wherein the photon emission is
at an ultraviolet wavelength.

20. The method of claim 17, wherein the photon emission is
from a xenon gas.

REMARKS

I. Introduction

In response to the Office Action of June 26, 1997, claims 11-16 have been cancelled without prejudice, and claims 1 and 17 have been amended. Claims 1-10 and 12-20 are in the application.

Re-examination and re-consideration of the application, as amended, is requested.